



CARDD
MEPA ROUTING MEMO

To: Mark Bostrom
Through: Autumn Coleman
From: Demi Blythe

Re: Trumbull Creek Environmental Assessment Final MEPA Decision
Project Sponsor: Flathead Conservation District
Name of Project: Trumbull Creek Restoration and Aquifer Protection
Agreement No: RRG-20-1750

Memo:

DNRC can issue a Final Finding of No Significant Impact Environmental Assessment for Flathead Conservation District Trumbull Creek Restoration and Aquifer Protection Project (attached). We scoped the project for 14 days on the DNRC Public Notice Webpage. No public comments were submitted. **SIGNATURE REQUIRED**

___/s/DEB___ MEPA/NEPA Coordinator Review

___^{DS}
[Signature] Bureau Chief Review
___ Division Administrator Signature

___ Post for _30_ Days on DNRC's Environmental Docs page.

___ File

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION



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FINAL ENVIRONMENTAL ASSESSMENT

Project Name:	Trumbull Creek Restoration and Aquifer Protection
Proposed Implementation Date:	July 2020
Proponent:	Flathead Conservation District
Location:	Trumbull Creek, located approximately 6 miles southwest of Columbia Falls in Sections 3, 9, and 10, T29N, R21W; Lat: 48.29105, Long: -114.26305
County:	Flathead County

I. TYPE AND PURPOSE OF ACTION

Flathead Conservation District (here on, FCD) proposes to re-establish the Trumbull Creek stream channel and increase the grade of Trumbull Creek (Map attached at end of this document) beginning Summer 2020. The proposed project will enhance, develop, and preserve the surface/groundwater system of the Evergreen aquifer. Trumbull Creek will be *enhanced* with 7,150 linear feet of channel construction to reconnect the stream with the groundwater table. Combined with 2,270 feet of a previously restored reach, Trumbull Creek will have a defined channel and year-round flow for nearly two continuous miles. This project will *sustainably develop* the Evergreen aquifer by allowing the shallow groundwater to supply surface water flow. The project will help *preserve* the Trumbull Creek / Evergreen aquifer system in many ways. First, restoring a two-mile functional creek will create a water feature the community will have an incentive to protect and conserve. Second, improving channel flow will decrease flood inundation and minimize transport of non-point source pollution, thereby preserving the water quality of the stream and aquifer. Water quality will also benefit from increasing riparian vegetation along the stream which will mitigate nutrient loads (nitrogen and phosphorus) and temperature increases. This project meets the RRGL program purpose by *developing* the Trumbull Creek/ Evergreen Aquifer renewable resource and *preserving* its water quality to maintain the potential for economic development in the project area.

DNRC will approve the grant to provide funding for the Trumbull Creek Restoration and Aquifer Protection Project.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project. List number of individuals contacted, number of responses received, and newspapers in which notices were placed and for how long. Briefly summarize issues received from the public.

FCD held a public meeting in March of 2018 to scope the issues and landowner interest in working in this area of Trumbull Creek. Almost 20 landowners attended the meeting and expressed interest in being involved. FCD also conducted individual landowner outreach to engage people whose property would be directly impacted by the project, and all are enthusiastic about the project. FCD will continue working directly with landowners throughout the final design and project implementation. Letters of support are attached to

this application, confirming public approval.

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

Examples: cost-share agreement with U.S. Forest Service, 124 Permit, 3A Authorization, Air Quality Major Open Burning Permit.

All applicable state, federal, and local laws will be followed during implementation of this project, and all necessary permits will be acquired prior to initiating construction. No new water appropriations will be developed as part of this project. This project is not located in sage grouse habitat.

3. ALTERNATIVE DEVELOPMENT:

Describe alternatives considered and, if applicable, provide brief description of how the alternatives were developed. List alternatives that were considered but eliminated from further analysis and why. Include the No Action alternative.

The applicant evaluated alternatives for accomplishing the project goals of eliminating the risk of waterfowl/airplane collisions, improving the hydraulic performance of Trumbull Creek, and reducing flood-inundated area. Glacier Park International Airport (GPIA) evaluated an alternative in which wire netting would be stretched over ponded water to deter waterfowl from the airport. The airport would require 50,000 square yards of netting at \$55/sy for a total project cost of \$3.1 million (accounting for 15% contingency). This alternative is economically restrictive and it does not improve the hydraulic performance of Trumbull Creek, nor does it improve water quality of surface and groundwater like the preferred alternative.

Ponded surface water might be dewatered using portable pump systems after flooding has subsided. The flat topography in the project area would require long sections of discharge hose to dewater ponded areas. This alternative would incur special permitting costs for surface water discharge compared to other alternatives. Pumping costs would be incurred nearly every year given the frequency of flooding and ponded water. Ultimately this alternative was not selected for further analysis due to high annual costs and its inability to produce a sustainable, long-term, low maintenance solution.

A third alternative was assessed in which the on-stream dam was removed and culverts at Birch Grove Road were replaced to increase flow capacity. Hydraulic modeling indicated these improvements alone would not solve ponding and flood inundation issues (Appendix A). While these structures are impeding flow efficiency, longitudinal stream grade is also a major cause of flow issues. Dam removal and culvert replacement would be a more affordable solution but would only provide minimal flow improvements. This alternative was ultimately included in the preferred alternative of stream restoration.

The no action alternative continues poor flow conditions in Trumbull Creek and maintains an unacceptable health and safety risk with waterfowl near the airport runway. No action would maintain high annual maintenance costs at the airport for managing waterfowl. No action also continues the threat of flood damage to properties and Birch Grove Road. Finally, no action may continue to deteriorate surface and groundwater quality by allowing flood waters to transport non-point source pollution from inundated properties. GPIA has determined inaction is unacceptable and waterfowl / flow issues at the airport must be addressed in the near-term. The preferred alternative incorporates stream restoration downstream of the airport to maximize the environmental benefits with a community-scale project.

The preferred alternative is to improve flow conditions by creating a stream channel with positive longitudinal grade and remove/replace flow restriction structures (small private dam and Birch Grove Road culverts). The project builds on the GPIA's need to eliminate ponding and minimize the waterfowl threat to aircraft. By restoring Trumbull Creek and increasing the stream grade downstream of the airport, GPIA can increase the stream's slope on its property thereby reducing ponding. For example, the Birch Grove Road culverts are set at an elevation too high to allow adequate flow relief of the airport property. Increasing the capacity and lowering the elevation of the Birch Grove Road culverts will give the airport more elevation drop in which to grade the stream slope. Lowering the stream will intercept the groundwater to provide a perennial stream and increase the flow efficiency during flooding conditions. Decreasing flood inundation will minimize transport of non-point source pollution and improve water quality. Considering the elimination of the waterfowl risk at the airport and the numerous environmental benefits from stream restoration, the preferred alternative has the best cost-benefit ratio of all the alternatives.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" if no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify direct, indirect, and cumulative effects to soils.

DNRC Program Specialists mapped the soils resource using the NRCS web soil survey application and gathered soils data by Section (in this case, Sections 3, 9, and 10). The primary soil type in the defined area is Walters very fine sandy loams (34%), Swims silt loam (15%), Flathead-Creston loams (11%), and Kiwanis loams (10%; NRCS Soil Report attached at the end of this document). Walters very fine sandy loams are defined as Farmland of Statewide Importance. Swims silt loams and Kiwanis loams are designated as prime farmland if irrigated, and Flathead-Creston loams areas are all prime farmland. The remaining soil types are largely considered well- to excessively drained apart from Alluvial land, which is considered poorly drained.

The Evergreen aquifer is a unique hydrogeologic feature where invertebrates can be found in the groundwater because of the strong hydraulic connection to the Flathead River.

Proposed Alternative – The proposed alternative impact to the soil resource is not expected to impact the soil resources in the project area as stream construction will involve shallow excavation of topsoil and no major difficulties are expected. There may be a beneficial impact to the Evergreen aquifer as the proposed project will benefit the aquifer water quality by reducing transport of non-point source pollution from the surface. Connecting Trumbull Creek to the aquifer will not adversely impact the aquifer supply as the creek will only flow when the groundwater table is high and overflowing.

No Action – No impact to soil resources as no disturbances will occur.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify direct, indirect, and cumulative effects to water resources.

Trumbull Creek originates in the Smoky Range mountains approximately 11 miles upstream from the upper project area limit at Conn Road / Highway 2. The basin contributing to flow at Birch Grove Road is 23.9 square miles. The mean annual precipitation is 25.24 inches and the basin has 65.4 percent forest coverage.

Previous studies have calculated recurrence interval flows at various locations on Trumbull Creek. The 100-

year flow at the GPIA runway culvert was estimated with a range from 370 to 1,096 cfs (CH2M, 2017). Four methods were used in estimating this range, including: Manning's Equation of existing channel capacity, Montana regression equations, statistical analysis of nearby stream gage records, and a rainfall-runoff analysis (HEC-HMS) using the Clark Unit Hydrograph Method with NOAA Atlas 2 rainfall data.

Two methods were used to estimate flood flows at Olympia Way with recurrence intervals from 1 to 500 years (RDG, 2013). Montana regression equations were used to estimate a 100-year flow at Olympia Way of 401 cfs based on basin area, forest cover, and precipitation. The second method estimated the 100-year flow as 312 cfs by transposing data from USGS stream gage 12136600. This gage on Trumbull Creek near Columbia Falls operated from 1997 to 2002. The small data set on which this gage transfer analysis was based limits the confidence associated with the results.

A third study estimated the 100-year flow at the Glacier Ranch subdivision at 331.4 cfs (RLK Hydro Inc., 310 Application, 2007). No methods are provided in the 310 application materials describing how the flow was estimated.

Due to the lack of stream gage data on Trumbull Creek, the most appropriate hydrologic analysis for the present assessment is a regression analysis of Montana stream data. Table 1 in the application presents the USGS StreamStats results for recurrence interval peak flows at Birch Grove Road. Results were derived from Montana stream data through water year 2011 (USGS, 2016). The 100-year flow is 444 cfs which is comparable to flows calculated in previous studies. While 100-year flow rates are standard for floodplain delineation studies, the current assessment is focused on investigating more frequent flooding issues. Observations within the Trumbull Creek study area note flooding issues on nearly an annual basis. Therefore, a more appropriate range of flows for the current assessment may be up to the 2.33-year peak flood of approximately 110 cfs.

Trumbull Creek is listed by Montana DEQ as a B-1, Non-Exception Stream (Discover DEQ throughout Montana, <https://gis.deq.mt.gov/portal/apps/webappviewer>). Waters classified B-1 are to be maintained suitable for drinking, culinary, and food processing purposes, after conventional treatment; bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply. In addition, Trumbull Creek is tributary to the Stillwater River which is listed for a sediment TMDL.

Proposed Alternative – Project is intended to enhance conveyance of floodwaters through the hydrologic system, reduce ponding of floodwaters behind road crossings, reduce flooding in residential areas and livestock pastures, and reduce non-point source pollution. Trumbull Creek and the Evergreen aquifer are tributaries to the Stillwater and Flathead River systems which stand to benefit in water quality (temperature, nutrients, etc.) from this project.

No Action – Trumbull Creek will continue to create hazardous flooding issues and unsafe conditions for waterfowl.

6. AIR QUALITY:

What pollutants or particulate would be produced (i.e. particulate matter from road use or harvesting, slash pile burning, prescribed burning, etc)? Identify the Airshed and Impact Zone (if any) according to the Montana/Idaho Airshed Group. Identify direct, indirect, and cumulative effects to air quality.

The project area is not listed as impaired in air quality particulates per the Montana DEQ Air Quality Nonattainment Status list (Source: Montana DEQ Air Quality Website visit).

Preferred Alternative – Potentially adverse impacts to air quality as short-term dust emissions may occur during construction and actions should be taken by the construction contractor to minimize any dust emissions.

No Action – No impact to current air quality.

7. VEGETATION COVER, QUANTITY AND QUALITY:

What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify direct, indirect, and cumulative effects to vegetation.

The project area is on private land (<1% on public; estimated using the Montana Natural Heritage Program website). The predominant vegetative communities in the project area are cultivated crops (26%), Rocky Mountain Lower Montane, Foothill, and Valley Grassland (16%), and Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland (6%). The remaining land cover is primarily under human land use, such as commercial/Industrial (15%), pasture/hay (13%), and developed open space (9%; MTNHP Land Cover web Mapviewer). There are five State-listed Plant Species of Concern potentially occurring in the project Township and Range area (Source: Montana Natural Heritage Program website) and one Federally-Threatened species, the Spalding's Catchfly (*Silene spaldingii* S. Watson) is listed by the NRCS as potentially occurring in the project area (USDA NRCS Plants database, [Plants 3 \(usda.gov\)](https://plants.usda.gov)).

Proposed Alternative – The proposed project is expected to be potentially beneficial as the proposed stream restoration will improve riparian area along the 7,150 linear feet of the project area. Restoration design will include planting of riparian vegetation within 10 feet of either side of the stream. Therefore, the project will result in approximately 3.3 acres of improved riparian habitat (7,150 ft x 10 ft x 2 / 43,560 ft²/acre). In addition, the project proposes to enhance the wetland conditions, including enhancements to existing palustrine scrub-shrub, palustrine forested, palustrine emergent, palustrine aquatic bed, and riverine wetlands within the project area.

No Action – Given the project is primarily on cultivated croplands, there will likely be no to minimal impact on the native and/or rare plant species that could occur in the area.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify direct, indirect, and cumulative effects to fish and wildlife.

Trumbull Creek is within the Stillwater River watershed, and the Stillwater watershed is considered Level 2 Priority with the Montana State Wildlife Action Plan (SWAP) for aquatic focal areas - watersheds. The project area does not fall within an Executive Order – General/Priority habitat area for sage grouse, and therefore will not likely impact sage grouse habitat (map attached). Though the project area does not appear to be impacting crucial and/or critical habitat areas, there are 11 Species of Concern and one special status species, the Bald Eagle, listed for Township 29W Range 21W as potentially occurring in the project area.

Proposed Alternative – Potentially beneficial as the proposed project intends to create a perennial flowing stream channel, subsequently increasing fish habitat and providing connectivity with Spring Creek and the Stillwater River. Stream restoration will include streambank willow plantings and wetland plant seeding to improve the riparian habitat.

No Action – There will likely be no impact to the current terrestrial, avian, and aquatic life and habitats given the project is not located within critical and/or crucial habitat areas.

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:

Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify direct, indirect, and cumulative effects to these species and their habitat.

DNRC used the National Wetlands Inventory (NWI) website to determine whether any wetlands were present within the lands adjacent to the project location (map attached). This search indicated there are wetlands

present within one (1) mile of the proposed project area. The proposed project may require a pre-application consultation with the U.S. Army Corps of Engineers to determine if a 404 Permit is required.

As mentioned in the previous section, there are 11 species of concern listed as potentially using the project area as viable habitat. Landowners have provided anecdotal evidence of Trumbull Creek historically supporting a year-round fish population. Now, because of poor stream grade, the creek cannot supply year-round flow. Fish are only present for a few months during periods of high flow. Immediately downstream of the project area, some fish can be found year-round in the previously-restored stream section in the Glacier Ranch subdivision.

Proposed Alternative – The proposed project potentially has beneficial impacts because it will enhance wetland conditions, including enhancements to existing palustrine scrub-shrub, palustrine forested, palustrine emergent, palustrine aquatic bed, and riverine wetlands within the project area. A 404 permit issued by US Corps of Engineers will be required for the placement of fill into waters of the United States. The proposed restoration project will add 7,150 feet of perennially-flowing stream thereby enhancing the performance of the previous restoration project at Glacier Ranch subdivision. Building on the 2,270 linear feet of restored stream at Glacier Ranch, the proposed project will result in a continuous 9,420 feet of restored stream. This nearly 2-mile stretch of Trumbull Creek should contain sufficient year-round flows to support a sustainable fish population.

No Action – The limited to no unique, endangered, or fragile environmental resources in the area will not be significantly impacted by the no action alternative.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

Identify and determine direct, indirect, and cumulative effects to historical, archaeological or paleontological resources.

The project area is primarily on private, cropland and there are no known historic or archeological resources in the area.

Proposed Alternative – While no impacts are expected to historic, cultural, and archaeological resources, the State Historic Preservation Office (SHPO) will be contacted during the design and permitting phase to ensure the project does not impact historic, cultural and archaeological resources. If previously unknown cultural or paleontological materials are identified during project related activities, the DNRC grant manager will be notified, and all work will cease until a professional assessment of such resources can be made.

No Action – No impact to historical or archaeological sites.

11. AESTHETICS:

Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify direct, indirect, and cumulative effects to aesthetics.

Currently, Trumbull Creek only flows intermittently during periods of high groundwater and significant surface runoff. With a low stream grade and no channel definition, the creek is prone to flooding issues. As such, much of the community views the current conditions of Trumbull Creek as a nuisance and not as a resource worth conserving. Trumbull Creek currently suffers from no defined stream channel and poor stream grade caused by surface topography, land use practices, and stream manipulation. Figure 3 in the application demonstrates the lack of stream channel making Trumbull Creek resemble a wide swale for flood conveyance rather than a stream corridor. County LiDAR data from 2009 confirms the broad alluvial plain causes the stream to be extremely flat yielding poor hydraulic performance. Ponding at GPIA is caused by low areas in the stream bottom (Figure 4 in the application). After floods recede, the low areas will not drain thereby growing wetland vegetation and attracting waterfowl. Also contributing to poor flow conditions are

inadequate culverts at Birch Grove Road (Figure 5 in the application) and the on-stream dam on private property immediately upstream of Birch Grove Road (Figure 6 in the application).

Proposed Alternative – Potentially beneficial as stream channel improvements will be visually appealing. Returning a stretch of Trumbull Creek to a fully functioning, year-round stream will improve its community value and build momentum toward restoring and conserving other reaches.

No Action – No impact to aesthetics.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:

Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify direct, indirect, and cumulative effects to environmental resources.

Trumbull Creek is a relic channel on top of the glacial alluvium between the Whitefish and Flathead Rivers. This glacial deposit is highly transmissive because of the sand, gravel, and cobble substrate, and Trumbull Creek has strong “communication” with the shallow groundwater of the Evergreen aquifer. Historically, Trumbull Creek was subject to manmade diversions for agriculture and livestock. The surface grade is extremely flat causing Trumbull Creek to lose and gain water to/from the groundwater at different locations. The flat surface provided a suitable location for GPIA, which led to more manipulation of Trumbull Creek. Shallow groundwater, livestock grazing, floods, and manmade manipulations have led to the current stream conditions of poor channel definition, flat grade, inefficient culverts, and flooding.

Proposed Alternative – Potentially beneficial as re-establishing a stream channel and increasing the grade of Trumbull Creek will enhance, develop, and preserve the surface/groundwater system of the Evergreen aquifer. Trumbull Creek will be enhanced with 7,150 linear feet of channel construction to reconnect the stream with the groundwater table. Combined with 2,270 feet of a previously restored reach, Trumbull Creek will have a defined channel and year-round flow for nearly two continuous miles. This project will sustainably develop the Evergreen aquifer by allowing the shallow groundwater to supply surface water flow. The project will help preserve the Trumbull Creek / Evergreen aquifer system in many ways. First, restoring a two-mile functional creek will create a water feature the community will have an incentive to protect and conserve. Second, improving channel flow will decrease flood inundation and minimize transport of non-point source pollution, thereby preserving the water quality of the stream and aquifer. Water quality will also benefit from increasing riparian vegetation along the stream which will mitigate nutrient loads (nitrogen and phosphorus) and temperature increases.

No Action – The no action alternative continues poor flow conditions in Trumbull Creek and maintains an unacceptable health and safety risk with waterfowl near the airport runway.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

- The project site is located within a rural residential area with the typical infrastructure to be located during the survey and design phase of the project.
- Project site is within a FEMA Zone A floodplain. Floodplain permit issued by Flathead County will be required. The project will reduce flooding impacts by increasing the conveyance capacity of Trumbull Creek.
- A 404 permit issued by US Corps of Engineers will be required for the placement of fill into waters of the United States

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

Historically, Trumbull Creek was subject to manmade diversions for agriculture and livestock. The surface grade is extremely flat causing Trumbull Creek to lose and gain water to/from the groundwater at different locations. The flat surface provided a suitable location for GPIA, which led to more manipulation of Trumbull Creek. Shallow groundwater, livestock grazing, floods, and manmade manipulations have led to the current stream conditions of poor channel definition, flat grade, inefficient culverts, and flooding.

Proposed Alternative—Potentially beneficial as reducing flood potential and ponding of water in the vicinity of the runway for the Glacier International Airport is expected to improve traveler safety by reducing waterfowl-airplane collisions. In addition, flood reduction on private property and at Birch Grove Road will improve local public health and safety.

No Action – The no action alternative continues poor flow conditions in Trumbull Creek and maintains an unacceptable health and safety risk with waterfowl near the airport runway. No action also continues the threat of flood damage to properties and Birch Grove Road. Finally, no action may continue to deteriorate surface and groundwater quality by allowing flood waters to transport non-point source pollution from inundated properties.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

Identify how the project would add to or alter these activities.

The project area is located on private property between the GPIA and Glacier Ranch subdivision, thus impacting airport operations and urban areas. A search of the DNRC water rights database indicates 33 landowners downstream of the project area use up to 3.32 cfs of Trumbull Creek for irrigation on a combined 288.5 acres.

Proposed Alternative – Potentially beneficial as reducing flood potential and ponding of water in the vicinity of the runway for the Glacier International Airport is expected to benefit airport operations and allow for commercial development. Flood mitigation on the airport property will allow commercial development near Highway 2 which is within local zoning and development plans. Water right owners will also benefit from increased stream flows resulting from re-establishing the creek's connection to the shallow groundwater table.

No Action – The no action alternative continues poor flow conditions in Trumbull Creek and maintains an unacceptable health and safety risk with waterfowl near the airport runway. No action also continues the threat of flood damage to properties and Birch Grove Road.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Estimate the number of jobs the project would create, move or eliminate. Identify direct, indirect, and cumulative effects to the employment market.

Currently, two full-time employees spend part of their shift patrolling the airport for wildlife/birds. The airport also must fix fences in Trumbull Creek following flood damage.

Proposed Alternative – No impact is expected to the quantity and distribution of employment as project construction may use local contractors but is not expected to increase long-term employment.

No Action – No impact to quantity and distribution of long-term employment.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:

Estimate tax revenue the project would create or eliminate. Identify direct, indirect, and cumulative effects to taxes and revenue.

Potential flood damage at Birch Grove Road could be a liability for the Flathead County Roads department and the community. Were Birch Grove Road to be damaged during a flood, community access to emergency services could be impaired. Depending on the extent of flood damage to the culverts, repairs are likely to be more expensive than the prescribed restoration effort. Assuming flood damage repair is twice the proposed restoration cost, the project would save \$31,000 by replacing the Birch Grove Road culverts.

Proposed Alternative – Potentially beneficial as this project may increase local tax revenues by improving land values with a perennial stream. In addition, stream restoration on the airport property will facilitate commercial development.

No Action – There will continue to be an increased risk of flood damage and maintenance costs if no stream restoration were to occur along Trumbull Creek.

18. DEMAND FOR GOVERNMENT SERVICES:

Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify direct, indirect, and cumulative effects of this and other projects on government services

The excess ponding attracts waterfowl near the airport and GPIA personnel continually cleans the stream channel and diverts birds. The impaired culverts present a potential for flood damage at Birch Grove Road, which would impact community access to emergency services and could be a liability for both Flathead County Roads department and the community.

Proposed Alternative – Potentially beneficial as reducing flood potential and ponding of water in the vicinity of the runway for the Glacier International Airport is expected to benefit airport operations. Improved flow at Birch Grove Road will reduce traffic impacts during flood events.

No Action – The no action alternative will keep the culverts in their present state and therefore the liability of flood damage will continue and be a concern for both the Flathead County Roads department and the community. In addition, the ponding near the airport will continue to present a threat of waterfowl/aircraft collisions.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:

List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

Trumbull Creek is part of the Flathead-Stillwater Restoration Plan which aims to continue restoring Trumbull Creek through addressing various hydraulic conveyance issues. The project area is also located in a FEMA Zone A floodplain and thus is under the jurisdiction of the Flathead County Floodplain regulations.

Proposed Alternative – Potentially beneficial as the proposed stream restoration and flood risk mitigation is expected to increase the conveyance capacity of Trumbull Creek through installing correctly-sized culverts and regrading Trumbull Creek (Appendix C of application).

No Action – With the no-action alternative, Trumbull Creek will continue to present a flooding threat and waterfowl nuisance problem to Flathead County roads department and residents. The no action alternative is not in accordance with the Flathead County Floodplain regulations.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:

Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify direct, indirect, and cumulative effects to recreational and wilderness activities.

The project will take place on private land and is not immediately located next to any wilderness areas or roads that access wilderness areas. The project is within the Trumbull Creek stream channel and the creek is popular with anglers because of its sizable population of non-native Brook Trout (Appendix C of application).

Proposed Alternative – Potentially beneficial as the proposed water quality improvement to Trumbull Creek and the Evergreen aquifer will improve the quality of the Stillwater and Flathead rivers downstream which are public access resources. The project does not increase public access to Trumbull Creek.

No Action – No impacts to access of recreational and/or wilderness activities

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:

Estimate population changes and additional housing the project would require. Identify direct, indirect, and cumulative effects to population and housing.

The project area is located private land near the Glacier Ranch subdivision near Kalispell, Montana. As of 2019, Kalispell has an estimated population of 24,565 individuals and 48,785 housing units ([Population - Census and Economic Information Center \(mt.gov\)](https://www.mt.gov/population-census-and-economic-information-center)).

Proposed Alternative – The proposed project will not likely have any changes in population demographics; however, the project is anticipated to improve housing conditions for surrounding landowners by reducing the potential risk of flooding.

No Action – No impact to the density or distribution of housing; however, landowners will continue to be impacted by flooding and associated flood hazards to their households.

22. SOCIAL STRUCTURES AND MORES:

Identify potential disruption of native or traditional lifestyles or communities.

The project is located on private land and the current conditions contain ponded water, waterfowl attractants, and flood hazards.

Proposed Alternative – Potentially beneficial as the most important citizen benefit is the improvement to community health and safety. Reducing ponded water and waterfowl attractants at the airport is a high-priority safety concern. Eliminating the potential for bird-plane collisions avoids a disaster with a high loss-of-life potential. Further, community health and safety would be secured by preserving the quality of the drinking water aquifer. The aquifer's high transmissivity makes it susceptible to contaminants introduced at the surface. The project will help reduce contaminant transport by reducing the surface area inundated during floods and increased riparian vegetation growth will help intercept contaminants before they reach the groundwater.

No Action – No major impact to social structures; however, the local community will continue to be impacted by flood hazards associated with the poor conveyance of Trumbull Creek.

23. CULTURAL UNIQUENESS AND DIVERSITY:

How would the action affect any unique quality of the area?

The project location is between the Glacier Park International Airport and residential subdivisions. Trumbull Creek has been viewed as a nuisance and liability for the residents, thus any action to restore the creek would prove beneficial for any potential cultural uniqueness or diversity.

Proposed Alternative – No impact is expected to the cultural uniqueness or diversity of the area; though stream restoration may improve the aesthetics and subsequent local appreciation of the creek.

No Action – No impact to cultural uniqueness or diversity.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:

Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify direct, indirect, and cumulative economic and social effects likely to occur as a result of the proposed action.

The stream restoration project will have many tangible economic benefits. First, GPIA will avoid constant maintenance costs of cleaning the stream channel and diverting birds. Currently, two full-time employees spend part of their shift patrolling the airport for wildlife/birds. The airport also must fix fences in Trumbull Creek following flood damage. These maintenance costs are estimated at \$20,000 per year and can be avoided with stream restoration. Second, potential flood damage at Birch Grove Road could be a liability for the Flathead County Roads department and the community. Were Birch Grove Road to be damaged during a flood, community access to emergency services could be impaired. Depending on the extent of flood damage to the culverts, repairs are likely to be more expensive than the prescribed restoration effort. Assuming flood damage repair is twice the proposed restoration cost, the project would save \$31,000 by replacing the Birch Grove Road culverts.

Proposed Alternative – Potentially beneficial as stream restoration will lead to improved ecosystem services which have tangible economic benefits. Reducing flood inundated area will maintain stream and groundwater quality by decreasing non-point source pollution. Many homeowners are using the Evergreen aquifer as a drinking water supply. Minimizing flooding and contaminants can reduce homeowner well maintenance costs for disinfection and water filtration. Assuming annual drinking water system maintenance costs are \$500, the stream restoration project may maintain water quality to avoid \$5,000 per 10 households. Stream restoration will also provide more reliable surface flows by tapping into the groundwater table. DNRC records indicate 33 landowners divert from Trumbull Creek downstream of the project area to irrigate up to 288.5 acres. These irrigators may economically benefit from a more reliable water supply. Finally, the county may benefit from increased tax revenues from the properties adjacent to the project reach. A perennial stream would increase property values and thus increase property tax revenue.

No Action – The no action alternative will continue to accrue maintenance costs for GPIA and there will

continue to be a flood damage risk to the community.

EA Prepared By:	Name: Demi Blythe	Date: 5/28/2021
	Title: CARDD Program Specialist	Email: Demitra.Blythe@mt.gov

V. FINDING

25. ALTERNATIVE SELECTED:

The preferred alternative is to improve flow conditions by creating a stream channel with positive longitudinal grade and remove/replace flow restriction structures (small private dam and Birch Grove Road culverts). The project builds on the GPIA's need to eliminate ponding and minimize the waterfowl threat to aircraft. By restoring Trumbull Creek and increasing the stream grade downstream of the airport, GPIA can increase the stream's slope on its property thereby reducing ponding. For example, the Birch Grove Road culverts are set at an elevation too high to allow adequate flow relief of the airport property. Increasing the capacity and lowering the elevation of the Birch Grove Road culverts will give the airport more elevation drop in which to grade the stream slope. Lowering the stream will intercept the groundwater to provide a perennial stream and increase the flow efficiency during flooding conditions. Decreasing flood inundation will minimize transport of non-point source pollution and improve water quality. Considering the elimination of the waterfowl risk at the airport and the numerous environmental benefits from stream restoration, the preferred alternative has the best cost-benefit ratio of all the alternatives.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

Short-term dust emissions may occur during construction and actions should be taken by the construction contractor to minimize any dust emissions.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

DRAFT

☐

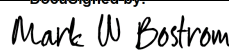
EIS

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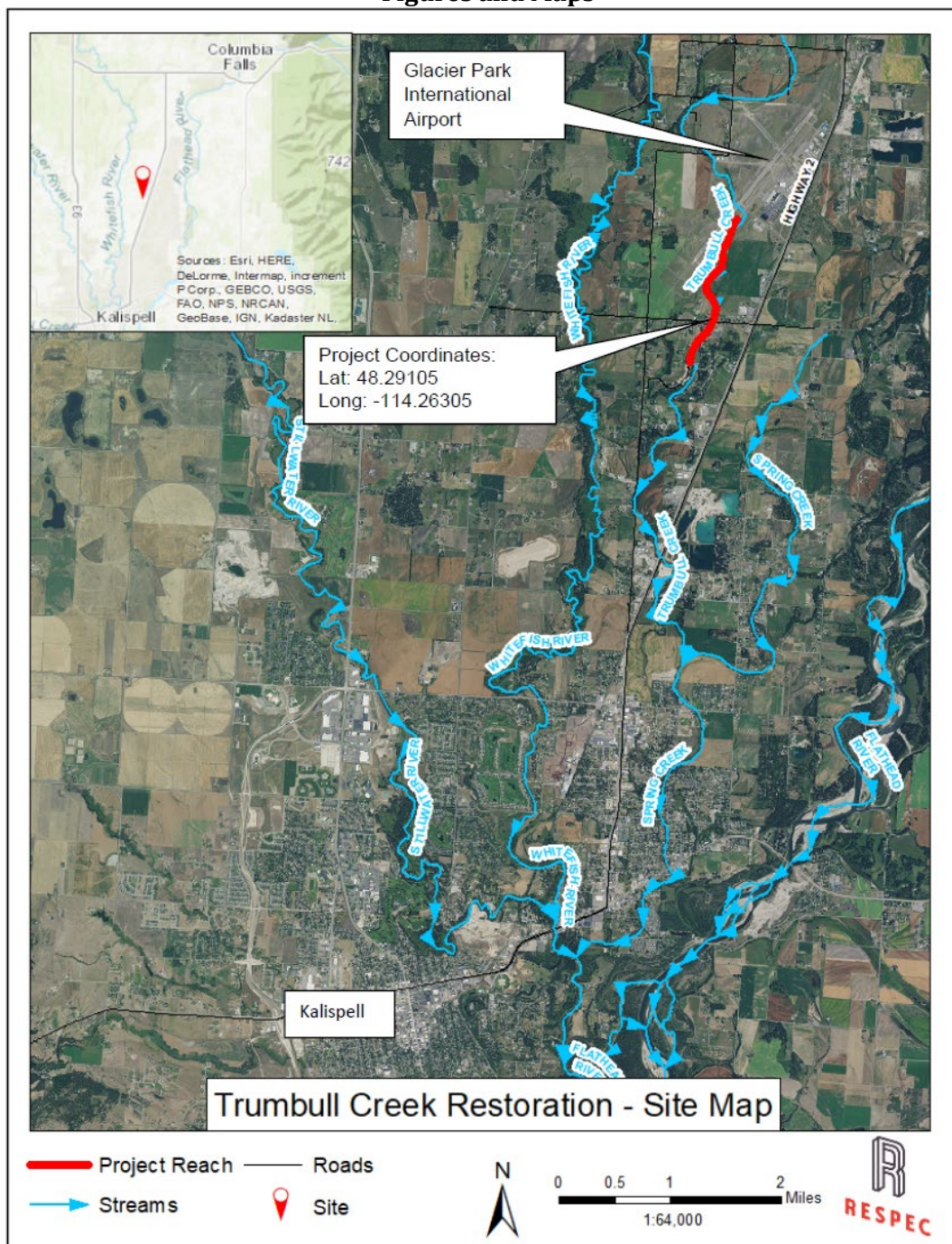
More Detailed EA

☒

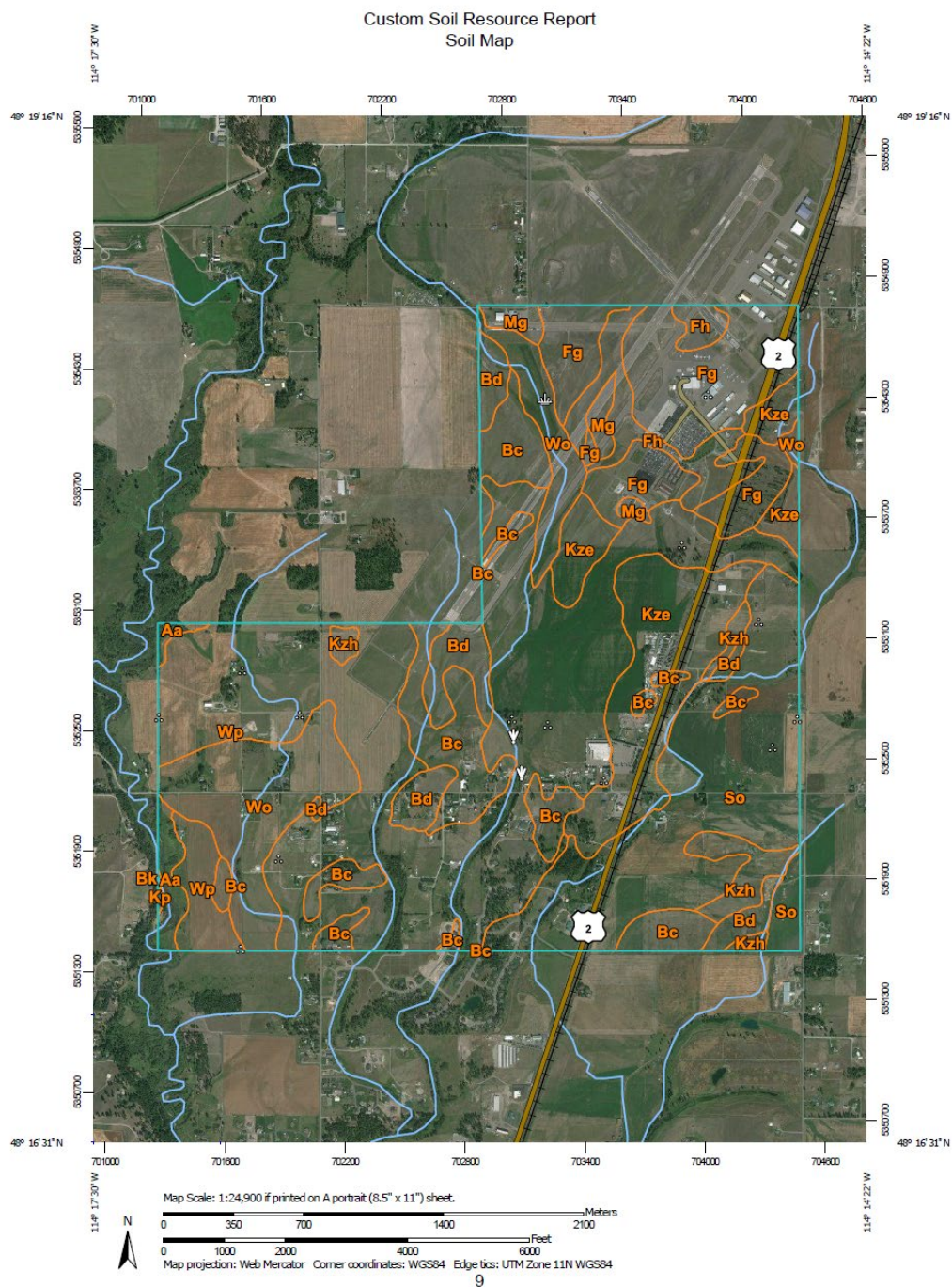
No Further Analysis

EA Approved By:	Name: Mark Bostrom	Date: 8/31/2021
	Title: CARD Division Administrator	
Signature:	 <small>DocuSigned by: BF7A1C50B2AF4DE...</small>	

Figures and Maps



NRCS Soil Map and Legend



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Aa	Alluvial land, poorly drained	22.8	1.2%
Bc	Birch fine sandy loam, 0 to 5 percent slopes	171.3	8.9%
Bd	Birch gravelly loam, 0 to 3 percent slopes	75.2	3.9%
Bk	Blanchard fine sand, 12 to 35 percent slopes	0.8	0.0%
Fg	Flathead-Creston loams, 0 to 3 percent slopes	211.0	11.0%
Fh	Flathead-Mires loams, 0 to 3 percent slopes	65.2	3.4%
Kp	Kalispell loam, moderately deep over sand, 0 to 3 percent slopes	0.2	0.0%
Kze	Kiwanis loam, 0 to 3 percent slopes	192.9	10.0%
Kzh	Kiwanis-Birch loams, 0 to 4 percent slopes	41.5	2.2%
Mg	Mires gravelly loam, 0 to 3 percent slopes	21.8	1.1%
So	Swims silt loam, 0 to 3 percent slopes	288.8	15.0%
Wo	Walters silt loam, 0 to 4 percent slopes	177.6	9.2%
Wp	Walters very fine sandy loam, 0 to 7 percent slopes	653.1	34.0%
Totals for Area of Interest		1,922.2	100.0%

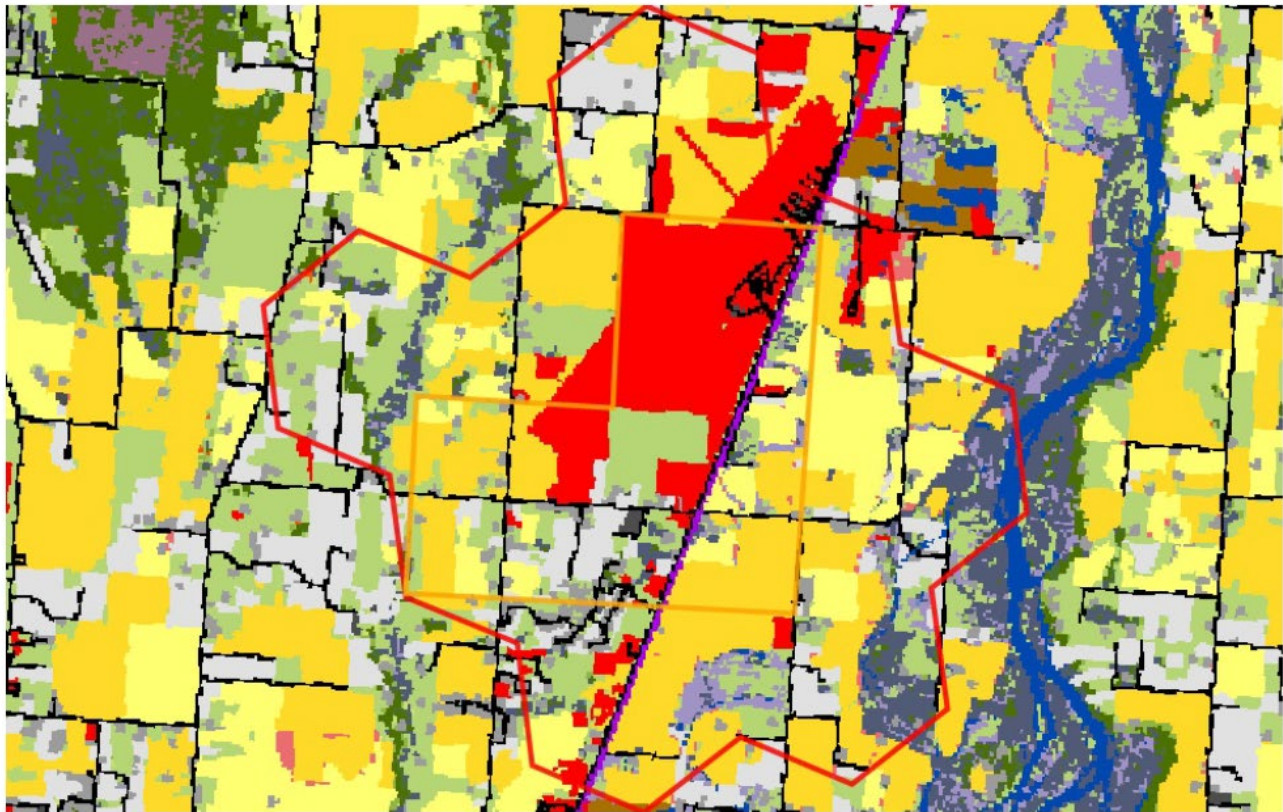
Montana Natural Heritage Program – Land Cover and Legend & Land Management Maps



	Latitude	Longitude
	48.26704	-114.22227
	48.32979	-114.30116

Land Cover

Summarized by: *(Custom Area of Interest)*



26% (1,474 Acres)

Human Land Use
Agriculture
Cultivated Crops

These areas used for the production of crops, such as corn, soybeans, small grains, sunflowers, vegetables, and cotton, typically on an annual cycle. Agricultural plant cover is variable depending on season and type of farming. Other areas include more stable land cover of orchards and vineyards.

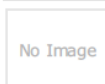


16% (913 Acres)

Grassland Systems Montane Grassland

Rocky Mountain Lower Montane, Foothill, and Valley Grassland

This grassland system of the northern Rocky Mountains is found at lower montane to foothill elevations in mountains and valleys throughout Montana. These grasslands are floristically similar to Big Sagebrush Steppe but are defined by shorter summers, colder winters, and young soils derived from recent glacial and alluvial material. They are found at elevations from 548 - 1,650 meters (1,800-5,413 feet). In the lower montane zone, they range from small meadows to large open parks surrounded by conifers; below the lower treeline, they occur as extensive foothill and valley grasslands. Soils are relatively deep, fine-textured, often with coarse fragments, and non-saline. Microphytic crust may be present in high-quality occurrences. This system is typified by cool-season perennial bunch grasses and forbs (>25%) cover, with a sparse shrub cover (<10%). Rough fescue (*Festuca campestris*) is dominant in the northwestern portion of the state and Idaho fescue (*Festuca idahoensis*) is dominant or co-dominant throughout the range of the system. Bluebunch wheatgrass (*Pseudoroegneria spicata*) occurs as a co-dominant throughout the range as well, especially on xeric sites. Western wheatgrass (*Pascopyrum smithii*) is consistently present, often with appreciable coverage (>10%) in lower elevation occurrences in western Montana and virtually always present, with relatively high coverages (>25%), on the edge of the Northwestern Great Plains region. Species diversity ranges from a high of more than 50 per 400 square meter plot on mesic sites to 15 (or fewer) on xeric and disturbed sites. Most occurrences have at least 25 vascular species present. Farmland conversion, noxious species invasion, fire suppression, heavy grazing and oil and gas development are major threats to this system.



15% (858 Acres)

Human Land Use Developed

Commercial / Industrial

Businesses, industrial parks, hospitals, airports; utilities in commercial/industrial areas.



13% (756 Acres)

Human Land Use Agriculture

Pasture/Hay

These agriculture lands typically have perennial herbaceous cover (e.g. regularly-shaped plantings) used for livestock grazing or the production of hay. There are obvious signs of management such as irrigation and haying that distinguish it from natural grasslands. Identified CRP lands are included in this land cover type.



9% (528 Acres)

Human Land Use Developed

Developed, Open Space

Vegetation (primarily grasses) planted in developed settings for recreation, erosion control, or aesthetic purposes. Impervious surfaces account for less than 20% of total cover. This category often includes highway and railway rights of way and graveled rural roads.

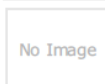


6% (318 Acres)

Wetland and Riparian Systems Floodplain and Riparian

Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland

This ecological system is found throughout the Rocky Mountain and Colorado Plateau regions. In Montana, sites occur at elevations of 609-1,219 meters (2,000-4,000 feet) west of the Continental Divide. East of the Continental Divide, this system ranges up to 1,676 meters (5,500 feet). It generally comprises a mosaic of multiple communities that are tree-dominated with a diverse shrub component. It is dependent on a natural hydrologic regime with annual to episodic flooding, so it is usually found within the flood zone of rivers, on islands, sand or cobble bars, and along streambanks. It can form large, wide occurrences on mid-channel islands in larger rivers, or narrow bands on small, rocky canyon tributaries and well-drained benches. It is also typically found in backwater channels and other perennially wet but less scoured sites, such as floodplains, swales and irrigation ditches. In some locations, occurrences extend into moderately high intermountain basins where the adjacent vegetation is sage steppe. Black cottonwood (*Populus balsamifera* ssp. *trichocarpa*) is the key indicator species. Other dominant trees may include boxelder maple (*Acer negundo*), narrowleaf cottonwood (*Populus angustifolia*), eastern cottonwood (*Populus deltoides*), Douglas-fir (*Pseudotsuga menziesii*), peachleaf willow (*Salix amygdaloides*), or Rocky Mountain juniper (*Juniperus scopulorum*). Dominant shrubs include Rocky Mountain maple (*Acer glabrum*), thinleaf alder (*Alnus incana*), river birch (*Betula occidentalis*), redbud (*Cornus sericea*), hawthorne (*Crataegus* species), chokecherry (*Prunus virginiana*), skunkbush sumac (*Rhus trilobata*), willows (*Salix* species), rose (*Rosa* species), silver buffaloberry (*Shepherdia argentea*), or snowberry (*Symphoricarpos* species).



5% (276 Acres)

Human Land Use Developed

Other Roads

County, city and or rural roads generally open to motor vehicles.



Human Land Use Developed

4% (252
Acres)

Low Intensity Residential

Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20-50% of total cover. These areas most commonly include single-family housing units in rural and suburban areas. Paved roadways may be classified into this category.



2% (134
Acres)

Wetland and Riparian Systems Wet meadow

Alpine-Montane Wet Meadow

These moderate-to-high-elevation systems are found throughout the Rocky Mountains, dominated by herbaceous species found on wetter sites with very low-velocity surface and subsurface flows. Occurrences range in elevation from montane to alpine at 1,000 to 3,353 meters (3,280-11,000 feet). This system typically occurs in cold, moist basins, seeps and alluvial terraces of headwater streams or as a narrow strip adjacent to alpine lakes (Hansen et al., 1996). Wet meadows are typically found on flat areas or gentle slopes, but may also occur on sub-irrigated sites with slopes up to 10 percent. In alpine regions, sites are typically small depressions located below late-melting snow patches or on snowbeds. The growing season may only last for one to two months. Soils of this system may be mineral or organic. In either case, soils show typical hydric soil characteristics, including high organic content and/or low chroma and redoximorphic features. This system often occurs as a mosaic of several plant associations, often dominated by graminoids such as tufted hairgrass (*Deschampsia caespitosa*), and a diversity of montane or alpine sedges such as small-head sedge (*Carex illota*), small-winged sedge (*Carex microptera*), black alpine sedge (*Carex nigricans*), Holm's Rocky Mountain sedge (*Carex scopulorum*) shortstalk sedge (*Carex podocarpa*) and Payson's sedge (*Carex paysonis*). Drummond's rush (*Juncus drummondii*), Merten's rush (*Juncus mertensianus*), and high elevation bluegrasses (*Poa arctica* and *Poa alpina*) are often present. Forbs such as arrow-leaf groundsel (*Senecio triangularis*), slender-sepal marsh marigold (*Caltha leptosepala*), and spreading globeflower (*Trollius laxus*) often form high cover in higher elevation meadows. Wet meadows are associated with snowmelt and are usually not subjected to high disturbance events such as flooding.

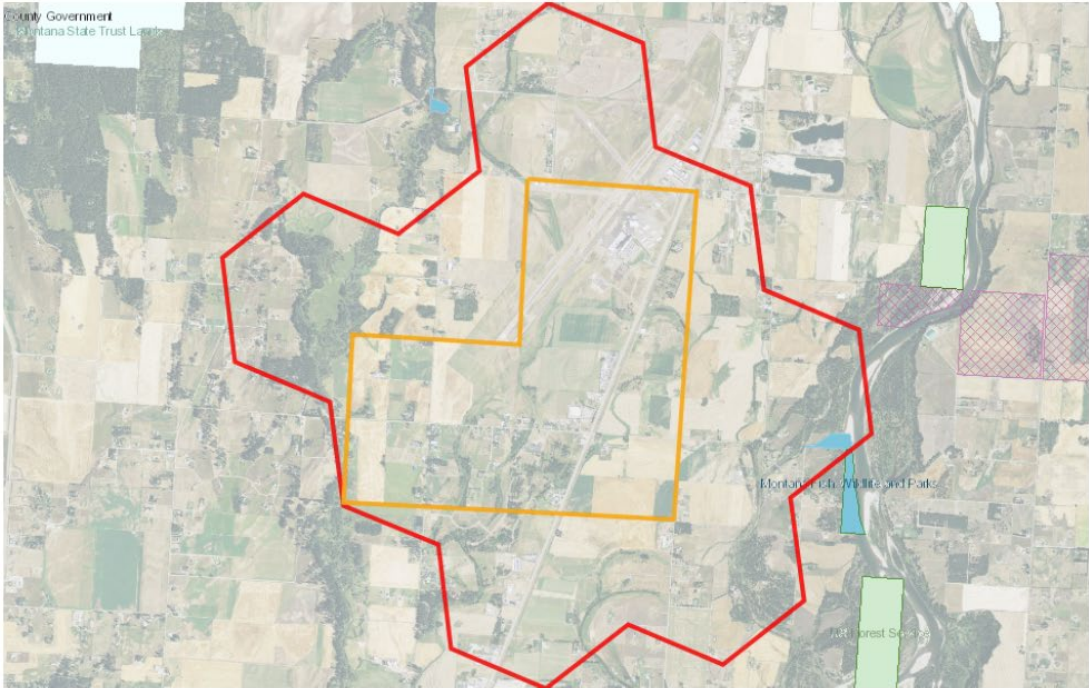
Additional Limited Land Cover

- 1% (51 Acres) ■ Railroad
- 1% (49 Acres) ■ Open Water
- 1% (40 Acres) ■ Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest
- 1% (39 Acres) ■ Major Roads
- <1% (24 Acres) ■ Introduced Upland Vegetation - Annual and Biennial Forbland
- <1% (14 Acres) ■ Rocky Mountain Montane-Foothill Deciduous Shrubland
- <1% (11 Acres) ■ Rocky Mountain Mesic Montane Mixed Conifer Forest
- <1% (10 Acres) ■ High Intensity Residential
- <1% (3 Acres) ■ Emergent Marsh
- <1% (2 Acres) ■ Rocky Mountain Subalpine-Montane Mesic Meadow
- <1% (2 Acres) ■ Quarries, Strip Mines and Gravel Pits
- <1% (2 Acres) ■ Rocky Mountain Ponderosa Pine Woodland and Savanna
- <1% (1 Acres) ■ Insect-Killed Forest
- <1% (0 Acres) ■ Aspen and Mixed Conifer Forest



Land Management

Summarized by: (Custom Area of Interest)



Land Management Summary				Explain
	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
Public Lands	11 Acres (<1%)			
Federal				
US Forest Service				
USFS Ranger Districts				
Flathead National Forest, Hungry Horse Ranger District				
USFS National Forest Boundaries				
Flathead National Forest				
State	11 Acres (<1%)			
Montana Fish, Wildlife and Parks	11 Acres (<1%)			
MTFWP Owned	11 Acres (<1%)			
MTFWP Fishing Access Sites				11 Acres
Pressantine Fishing Access Site				11 Acres
MTFWP Wildlife Habitat Protection Areas				
Flathead River Wildlife Habitat Protection Area				
Private Lands or Unknown Ownership	5,745 Acres (100%)			

USFWS Wetlands Map



Trumbull Wetlands



May 26, 2021

Wetlands

- | | | |
|--------------------------------|-----------------------------------|----------|
| Estuarine and Marine Deepwater | Freshwater Emergent Wetland | Lake |
| Estuarine and Marine Wetland | Freshwater Forested/Shrub Wetland | Other |
| | Freshwater Pond | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Montana Sage Grouse General Habitat Area Map

